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10/716,656

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EXAMINER

POLTORAK, PIOTR

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/716,656	Applicant(s) CHERITON, DAVID R.	
	Examiner PETER POLTORAK	Art Unit 2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6-11,14-20,22,24-31 and 34-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 18, 28, 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant amendment received on 1/29/08 have been entered.

Response to Arguments

2. Applicants arguments have been carefully considered.
3. Applicant remarks and amendment addressed the 35 USC § 112 rejection that, as a result, are withdrawn.
4. The amendment introduces a new limitation into the originally sole independent claim 1, 10, 20, 30 and 40 and dependent claims 6-9, 22, 24, 31, 34, 36-39, 43 and 46. Claims 2-3, 12-13, 21, 23 and 32-33 have been cancelled. The newly introduced limitation has required a new search and consideration of the pending claims. The new search has resulted in newly discovered prior art. New grounds of rejection based on the newly discovered prior art follow below.
5. Applicant arguments appear to be directed towards the previously presented claimed limitations rather than the amended version. However, for the clarity of the record, even though the arguments are moot in view of the new ground(s) of rejection, the examiner addresses applicant's allegations.
6. *In regard to 35 USC § 101 rejection directed towards claims 1-9, applicant argues that the claimed tunnel classification stage is part of a router, which further comprises a lookup unit, which in turn comprises a content-addressable memory.*
The examiner points out that the claim language does not limit the network device to a router. Although, the elements recited in the claims can be implemented by a router comprising memory, they also can represent software that is not patentable.

However, including hardware components that, as indicated by applicant, are part of the network device, in the claim language would overcome the 35 USC § 101 rejection.

Also, note that although some claims, e.g. claim 30, suggests that software is “executable on a computer system” (or in other words that software can be executed by a computer system), this does not alleviate the requirement of the software to be stored in hardware (e.g. RAM, disk, etc.) in order to meet the patentability requirements.

As per claims 10-12 and 14-15, applicant amendments addressed the “tangibility” issues and, as a result, the rejection cited in the previous Office Action is withdrawn.

7. On pg. 12-13 applicant agrees with the Office Action and remarks towards the use of conditionals. However, the relevance of these statements is not understood.
8. *As per claim 1-18, 20-28, 30-38, 40-48 and 46-48, applicant argues that AAPA does not include the security group identifier.*

The examiner points out that computers operate on values, whatever the value may represent, e.g. a user, a group, a domain, a network, a tunnel etc. In order for these values for a computer to offer any meaningful operations, these values must be interpreted by a computer according to the intended interpretation. It is accomplished by identifying these values by identifiers. In other words, reading a value, say 80, would be absolutely useless if there would be no indication what this value represents, e.g. is it a port 80, is it a number of ports open, is it a particular pointer, is a unique key of a particular database, etc. This is a fundamental

principle in computer science and particularly evident in a case where a condition is assigned to the value, e.g. as disclosed by AAPA (the specifications, paragraph [002]) restriction based on the Group(s) to which a user belong as disclosed by applicant's. Note that if there was no unique security group identifier computer could not distinguish between values, and search for a particular condition corresponding to a particular group would have not be effective.

9. *Applicant traverses limitations cited as being "well known".* However, applicant does not explicitly points out the rejection in question and, as a result, it is not clear whether applicant disregards or misunderstands the examiner provided rationale and/or examples. The examiner reminds applicant that in order to adequately traverse well known knowledge, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b). See also Chevenard, 139 F.2d at 713, 60 USPQ at 241 ("[I]n the absence of any demand by appellant for the examiner to produce authority for his statement, we will not consider this contention.").

10. Claims 1, 4, 6-11, 14-20, 22, 24-31 and 34-49 have been examined.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 101

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35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 1, 4, 6-7, 30-31, 34-41, 43-49 remain rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Computer software must be embodied on computer readable media.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

12. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

The newly amended limitation in claim 8: "said content-addressable memory is coupled to access said access control list..." is not understood. For purpose of the further examination the examiner treats the limitation as meaning "content-address memory configured to access said access control list".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1, 4, 6-11, 14-17, 19-20, 22, 24-27, 29-31, 34-37, 39-41, 43-47 and 49 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ke (USPUB 2003/0041266).

As per claims 1, 10-11, 20, 22, 30-31, 40-41 and 43, in paragraph [0040] Ke discloses as follows:

[0040] When a packet comes in, a controller (915) detects the packet. The controller is connected to the bus (920) and can communicate with the engines. Also connected to the bus (920) is a set of virtual private networks (925-940), that each are connected to a network, optionally through one or more switches (315). The exemplary networks shown in FIG. 9 include two DMZs (Demilitarized Zones) (965,970), an extranet (975) and a general population net (980). Each of the virtual private networks (VPNs), has an associated destination address and policies. After the packet has been detected by the controller (915), the controller (915) examines the data packet for a virtual private network destination address and identifies the policies that are associated with the virtual private network destination. If the policies include firewall policies, the controller (915) calls the firewall engine (905), which applies the set of firewall policies corresponding to the virtual private network destination to the data packet. If the policies include authentication policies, the controller (915) calls the authentication engine (910), which applies the set of authentication policies corresponding to the virtual private network destination to the data packet. After the respective engine has applied the policies, the data packet is routed to the virtual private network corresponding to the data packet's destination address. “[0039]

The examiner considers a virtual private network destination address to read on a security group identifier (SGI). The above teaching clearly discloses that the appropriate route (a VPN tunnel) of the packet is chosen based on the SGI. Thus, Ke's disclosure reads on classifying a packet based on a security group identifier,

determining said tunnel and forwarding said packet through a tunnel via which said packet is to be forwarded.

Since the above discussed activities are completed by the network device disclosed by Ke, the network device inherently must have the elements performing the tasks recited in the claim language. Thus packet classifying and processing is carried out by an element reading on the packet processing section and an element forwarding the packet reads on the packet processing section. Of course the packet carries various values, and in order for the classification stage and processing stage to happen the SGI must be identified. This task is accomplished by an element reading on a security group identifier identification unit.

Additionally, the examiner points out that the network devices disclosed by Ke and implementing the method discussed above, inherently comprise a processor and a storage device as well as sets/subsets of instructions executable on the devices. Furthermore, Ke discloses firewall policies that are applied to a packet [0018 and 0040]. The purpose of firewalls is to screen (permit or disallow forwarding of) packets.

Even if Ke would not disclose that forwarding the packet is subject to permissions (e.g. permit forwarding of a packet), the examiner points out that using forwarding packets having SGI if it is permitted is old and well known in the art of computer security (see Pfleeger, pg. 426-430 for example), and it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include forwarding packets having SGI if it is permitted given the benefit of security.

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14. As per claim 4, Ke explicitly disclose communicating using Internet, and Internet TCP/IP packets include network destination address in a header.

However, even if Ke's invention would not include SGI in the header of the packet, the examiner points out that not only such a solution would have been obvious variation well known in the art (see TCP/IP protocol, for example) but also this obvious variation would not affect the functionality of the invention.

15. As per claims 6, Ke clearly disclose the network device being a single device routing packets.

16. As per claims 7, a module verifying whether the forwarding the packet is permitted reads on a lookup unit.

17. As per claims 8, 14, 19, 24, 29, 34, 39, 44 and 49, Ke does not explicitly disclose an index and an ACL. However, the limitation, if not inherent, is at least implicit. In order to determine permissions there must be some kind of data structure that allows to compare particular values (e.g. SGI value) against the rules (permissions). This data structure is commonly referred to ACL in the art of the computer security. Even if, somehow, Ke was able to accomplish verifying the permissions without ACL-like data structure, the examiner points out that using ACL in order to determine permissions is old and well known in the art of computer security (see Windows NT/Unix file permissions, for example), and it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include ACL given the benefit of efficiency an ambiguous verification of security settings.

18. Furthermore, an ordinary artisan would readily recognize that the process of finding permissions associated with a particular value (e.g. SGI) in a data structure (such as ACL database/lookup table) involves accessing the structure using the particular value. The examiner considers the value (SGI) used in searching the permission to read on an index and, as a result, retrieving the SGI from the data packet on generating the index.
19. As per claims 9, 15, 25, 35 and 45, recites that ACL's included "information as to whether said packet can be sent via a tunnel" comprise "SGI field and a tunnel identifier field". The values representing SGIs in the ACL read on SGI field and clearly they are used in the process of determining whether a packet can be sent via a tunnel. Additionally, Ke clearly discloses that the policies can vary based on the type of the tunnel (e.g. the type of a tunnel: IPSEFC, L2TP, PPTP [0018 and 00 52]), which the examiner consider to be an identifier of the tunnel. Thus, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include an identifier of the tunnel in the ACL given the benefit of more comprehensive data forwarding determination.
20. Additionally, the "SGI field" and "a tunnel identifier field" as cited in the claims 9, 15, 25, 35 and 45 are data that are not functionally related to the process of determining packet handling. Thus, as long as one of the fields listed in ACL is found to be used in determining whether sending a packet is permitted, the "SGI field" and/or the "tunnel identifier field" are descriptive data that does not distinguish the claimed invention from the prior art in terms of patentability, see *In re Gulack*, 703 F.2d 1381,

1385, 217 USPQ 401, 404 (Fed. Cir. 1983); In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994). Because such data does not functionally relate to the process of determining and merely is a label any additional data describing policies (e.g. the type of a tunnel or a key field that inherently must be present in the searched database and can be any unique value, including a consecutive integer, see any database design literature) different from that in the prior art (at least “the tunnel identifier field”) would have been obvious. See Gulack cited above.

21. As per claims 16-17, 26-27, 36-37 and 46-47, the examiner considers the device discussed above (and disclosed as a object 305 in Fig. 3 and in detail in detail in Fig. 9) to be an egress router and devices 315 of Fig. 3 to be an ingress routers. (19 ACL).

Conclusion

Allowable Subject Matter: although applicant's argument towards previously presented claims 18, 28, 38 and 48 were find non persuasive, the newly amended claims 18, 28, 38 and 48 are objected to as being dependent upon a rejected base claim, but would overcome the art of record if rewritten in independent from including all of the limitations of the base claim and any intervening claims as well as addressing the 35 USC § 101 issues.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Poltorak whose telephone number is (571) 272-3840. The examiner can normally be reached Monday through Thursday from 9:00 a.m. to 4:00 p.m. and alternate Fridays from 9:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on (571) 272-3811. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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/Peter Poltorak/

Examiner, Art Unit 2134

/Kambiz Zand/

Supervisory Patent Examiner, Art Unit 2134